

pending claims.

Rejection of Claims 1-9

The Examiner has rejected claims 1-9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over *previously cited* U.S. Patent No. 5,263,188 (hereinafter Sanders), in view of *newly cited* U.S. Patent No. 5,046,106 (hereinafter Libel). Applicants respectfully traverse this rejection.

Sanders

Sanders describes that when a vehicle is equipped with front and rear speakers, a fade control is used to apportion the sound volume between the front and rear. (Background of the Invention). However, Sanders describes that when the fade control is changed, the balance of the frequency ranges is often changed which causes the operator to adjust the bass/treble settings manually upon each fade operation to maintain a consistent sound. (Id.)

Accordingly, an object of Sanders is to apply software techniques to compensate for the effect of fade change on the perceived frequency response of the vehicle sound system. (Summary of the Invention, col. 1, lines 42-45). As depicted in Figure 3, the base/treble level is on the vertical scale and the fade position is on the horizontal scale. Appropriate tone compensations are implemented by a microprocessor depending on the fade setting. (Col. 3, lines 12-68).

Sanders fails to teach or suggest the claimed fade volume computing unit that provides that the total volume within the vehicle is unchanged when a balancing point is moved and the claimed control unit that multiplies the signal supplied to the one speaker by k_1 when the signal supplied to the other speaker is attenuated by K_1 .

The Examiner has acknowledged the deficiencies of Sanders, but alleges that Liebel cures the above-mentioned deficiencies. Applicants respectfully disagree.

Liebel

Liebel describes that a typical vehicle sound system has a fader control for varying the relative intensity of sound radiated by front and rear speakers. (Background of the Invention). Liebel mentions that it is preferable that the fader control effects relative intensity without substantial change in total sound intensity of the system. *Id.* In particular, Liebel describes that the present invention provides substantially constant volume at least from 10% (30°) to 90% (270°). (Col. 4, lines 49-51).

Yet, a constant volume is not maintained from 10% (30°) to 0% (0°) or 90% (270°) to 100% (300°). Rather, Liebel behaves in a manner identical to the system disclosed in Applicants' specification on page 1, lines 16-24, where the front speaker does not vary in volume and the rear speaker decreases with the fade input. Indeed, the Examiner has overlooked the primary features and teachings of Liebel.

Liebel describes that the fader negligibly affects the bass components whereby “all of the system loudspeakers receive substantially the same energy below 250-300 Hz.” (Col. 1, lines 15-19; see also col. 1, lines 54-64). As a result, for any given volume setting, with the fader at an end setting, all the speakers still receive equal intensities of the bass component unaffected by the fader control. (Col. 1, line 64 – col. 2, line 3).

In view of the above, Liebel describes the fader control of Figure 2 that has one hundred percent of its rotation distributed over 300 degrees of travel. (Col. 1, lines 11-37). Liebel describes that when the fader is adjusted at 10% (30°) or 90% (270°) the treble/midrange components are essentially entirely directed to a front or rear speakers with minimum attenuation to the bass component applied to all four speakers. *Id.* However, when the fader is adjusted to the extreme of 0% (0°) or 100% (300°) the bass component in the front or rear speakers is removed. *Id.* Most importantly, however, is that the bass, treble/midrange components of the other speaker remain unattenuated. (Col. 3, lines 7-11; see also Figure 3, level of front bass/midrange/treble between 90% to 100%). In other words, the overall volume decreases and does not remain constant.

For at least these reasons, Leibel fails to teach or suggest the volume controller of claim 1.

Additionally, Leibel fails to teach or suggest the claimed fade volume computing unit that uses the amplifying factor k_1 and attenuating factor K_1 in order to keep the total volume unchanged when a balancing point is moved.

The allegedly corresponding implementation of the fader system of Liebel that includes the volume/dynamic equalization circuit 20 of Figure 5 and the balance control circuit 30 of Figure 6 fails to achieve an unchanging total volume within the vehicle when a balancing point is moved from a prescribed position, as recited in claim 1.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. MPEP §2143.03 (8th Edition); In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). For at least the reasons presented above, the Examiner has failed to establish a *prima facie* case of obviousness, because Sanders and Liebel, individually or in combination, fail to teach or suggest all the claim limitations of the volume controller of claim 1.

Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn.

For reasons analogous to those presented above with respect to claim 1, claims 2-9 should be patentable over the applied prior art. Accordingly, Applicants respectfully request that the rejection of claims 2-9 be withdrawn.

Rejection of Claim 1

The Examiner has rejected claim 1 under 35 U.S.C. §103(a) as allegedly being unpatentable over Sanders, in view of U.S. Patent No. 5,177,801 (hereinafter Shoda). Applicants respectfully traverse this rejection.

Applicants appreciate the Examiner's response to arguments set forth on page 7, paragraph 7 of the Office action. However, the Examiner's response fails to address the arguments raised by Applicants in their response to this rejection set forth in Applicants' Amendment filed on October 4, 2003. In particular, the Office action fails to address any of the arguments relating to the teachings of Shoda.

Accordingly, Applicants incorporate the arguments set forth in Applicants' Amendment filed on October 4, 2002. Additionally, Applicants provide the following supplemental comments.

The grounds of rejection are slightly different than that of the Office action dated July 5, 2002. In particular, in the present Office action, the Examiner alleges that Figure 4 of Shoda shows the 50-50 relationship as one channel is fading out the other is proportionally fading in therefore the overall operation is equivalent.

When considering the prior art as whole, it is clear that fading does effect the total volume. Accordingly, those skilled in the art, at the time of the invention, would have recognized that the cross-fading of the two channels depicted in Figure 4 does not teach or suggest that a total volume remains unchanged.

For at least these reasons, Sanders and Shoda, individually or in combination, fails to render obvious the volume controller of claim 1. Applicants respectfully request that the rejection of claim 1 be withdrawn.

Response Under 37 C.F.R. § 1.111
U.S. Application No. 09/986,695

Attorney Docket No. Q67179
Art Unit 2644

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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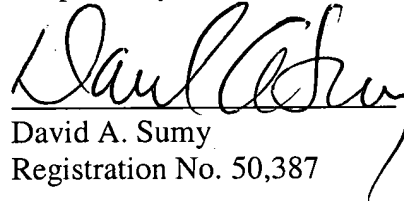
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